

LISTING OF CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A three-dimensional model search method ~~in which a feature value of~~
searching for a specific three-dimensional model is used to search for a similar three-dimensional
model of a plurality of three-dimensional models, comprising:

a search object image production step of producing a plurality of two-dimensional images
obtained by observing the specific three-dimensional model as an object of search from points of
view different from one another based on the specific three-dimensional model;

~~a first feature value extraction step of extracting the respective feature values of the~~
~~two-dimensional images from the plurality of two-dimensional images produced in the search~~
~~object image production step;~~

a search object storage step for storing three-dimensional model information regarding
the specific three-dimensional model and two-dimensional image information regarding the
plurality of two-dimensional images;

a search key input step of inputting a two-dimensional image as a search key;

~~a second feature value extraction step of extracting the feature value from the two-~~
~~dimensional image as the search key inputted in the search key input step; and~~

~~a similarity search step of using the feature values extracted in the first and second feature~~
~~value extraction steps to carry out similarity search, and outputting a three-dimensional model~~
~~which is similar to the search key.~~

a comparison step for comparing a similarity of the two-dimensional image input as the search key with similarities of the plurality of two-dimensional images for which the two-dimensional image information is stored in the search object storage step;

a determination step for determining similarities of the two-dimensional images based on a result of comparison in the comparison step; and

a three-dimensional model specification step for specifying a three-dimensional model associated with a two-dimensional image whose similarity is determined to be high in the determination step.

2. (Original) The three-dimensional model search method according to claim 1, wherein the two-dimensional image produced in the search object image production step is a two-dimensional projection image and/or a sectional image which corresponds to the three-dimensional model.

3. (Original) The three-dimensional model search method according to claim 2, wherein the two-dimensional projection image and/or the sectional image includes texture information.

4 – 5. (Cancelled)

6. (Currently Amended) A three-dimensional model search apparatus ~~which uses a feature value of~~ for searching for a specific three-dimensional model to search for a similar of a plurality of three-dimensional models ~~model~~, comprising:

a search object image production section which produces a plurality of two-dimensional images obtained by observing the specific three-dimensional model as an object of search from points of view different from one another based on the specific three-dimensional model;

~~a first feature value extraction section which extracts the respective feature values of the two-dimensional images from the plurality of two-dimensional images produced by the search object image production section~~

a search object storage section for storing three-dimensional model information regarding the specific three-dimensional model and two-dimensional image information regarding the plurality of two-dimensional images;

a search key input section which inputs a two-dimensional image as a search key;

~~a second feature value extraction section which extracts the feature value from the two-dimensional image as the search key inputted via the search key input section; and~~

~~a similarity search section which uses the feature values extracted by the first and second feature value extraction sections to carry out similarity search and which outputs a three-dimensional model similar to the search key~~

a comparison section for comparing a similarity of the two-dimensional image input as the search key with similarities of the plurality of two-dimensional images for which the two-dimensional image information is stored in the search object storage section;

a determination section for determining similarities of the two-dimensional images based on a result of comparison in the comparison section; and

a three-dimensional model specification section for specifying a three-dimensional model associated with a two-dimensional image whose similarity is determined to be high in the determination section.

7. (Original) The three-dimensional model search apparatus according to claim 6, wherein the two-dimensional image produced in the search object image production section is a two-dimensional projection image and/or a sectional image which corresponds to the three-dimensional model.

8. (Original) The three-dimensional model search apparatus according to claim 7, wherein the two-dimensional projection image and/or the sectional image includes texture information.

9-10. (Cancelled)

11. (Currently Amended) A three-dimensional model search program which allows a computer to ~~calculate a feature value of~~ search for a specific three-dimensional model ~~and to search for a similar~~ of a plurality of three-dimensional models ~~model using the feature value~~ and which allows the computer to realize:

a search object image production function of producing a plurality of two-dimensional images obtained by observing the specific three-dimensional model as an object of search from points of view different from one another based on the specific three-dimensional model;

~~a first feature value extraction function of extracting the respective feature values of the two-dimensional images from the plurality of two-dimensional images produced by the search object image production function~~

a search object storage function for storing three-dimensional model information regarding the specific three-dimensional model and two-dimensional image information regarding the plurality of two-dimensional images;

~~a search key input function of inputting a two-dimensional image as a search key;~~

~~a second feature value extraction function of extracting the feature value from the two-dimensional image as the search key inputted by the search key input function; and~~

~~a similarity search function of using the feature values extracted by the first and second feature value extraction functions to carry out similarity search, and outputting a three-dimensional model similar to the search key~~

a comparison function for comparing a similarity of the two-dimensional image input as the search key with similarities of the plurality of two-dimensional images for which the two-dimensional image information is stored in the search object storage function;

a determination function for determining similarities of the two-dimensional images based on a result of comparison in the comparison function; and

a three-dimensional model specification function for specifying a three-dimensional model associated with a two-dimensional image whose similarity is determined to be high in the determination function.

12. (Currently Amended) A three-dimensional model search system ~~which calculates a feature value of~~ for searching for a specific three-dimensional model ~~and which uses this feature value to search for a similar~~ of a plurality of three-dimensional models model, comprising:

~~a first feature value extraction section which extracts the respective feature values of two-dimensional images from a plurality of two-dimensional images obtained by observing the three-dimensional model as an object of search from points of view different from one another;~~

~~a second feature value extraction section which receives a two-dimensional image as a search key transmitted from a client via a network to extract a feature value of the two-dimensional image; and~~

~~a similarity search section which uses the feature values extracted in the first and second feature value extraction sections to carry out similarity search and which transmits information about a three dimensional model similar to the search key to the client via the network~~

a search object storage section for storing three-dimensional model information regarding the specific three-dimensional model and two-dimensional image information regarding a plurality of two-dimensional images;

a comparison section for comparing a similarity of a two-dimensional image input as a search key with similarities of the plurality of two-dimensional images for which the two-dimensional image information is stored in the search object storage section;

a determination section for determining similarities of the two-dimensional images based on a result of comparison in the comparison section; and

a three-dimensional model specification section for specifying a three-dimensional model associated with a two-dimensional image whose similarity is determined to be high in the determination section.

13. (Currently Amended) A three-dimensional model search apparatus ~~which uses a feature value~~ of for searching for a specific three-dimensional model to search for a similar of a plurality of three-dimensional models ~~model~~, comprising:

search object image production means for producing a plurality of two-dimensional images obtained by observing the specific three-dimensional model as an object of search from points of view different from one another based on the specific three-dimensional model;

~~first feature value extraction means for extracting the respective feature values of the two-dimensional images from the plurality of two-dimensional images produced by the search object image production means~~

a search object storage means for storing three-dimensional model information regarding the specific three-dimensional model and two-dimensional image information regarding the plurality of two-dimensional images;

search key input means for inputting a two-dimensional image as a search key;

~~second feature value extraction means for extracting the feature value from the two-dimensional image as the search key inputted by the search key input means; and~~

~~similarity search means for using the feature values extracted by the first and second feature value extraction means to carry out similarity search, and outputting a three-dimensional model which is similar to the search key~~

a comparison means for comparing a similarity of the two-dimensional image input as the search key with similarities of the plurality of two-dimensional images for which the two-dimensional image information is stored in the search object storage means;

a determination means for determining similarities of the two-dimensional images based on a result of comparison in the comparison means; and

a three-dimensional model specification means for specifying a three-dimensional model associated with a two-dimensional image whose similarity is determined to be high in the determination means.

14. (New) The three-dimensional model search method according to claim 1, wherein the comparison step is carried out based on feature values, which are parameter values obtained based on color components as a histogram obtained by quantizing values for respective color information, which is contained as those image components of image components in each of the two-dimensional images, which enable the similarities to be determined, and a shape histogram obtained by quantizing edge differentials.